

**ASH GROVE CEMENT COMPANY
LEAMINGTON QUARRY M/023/004
JUAB COUNTY, UTAH**

AGENDA

Friday, January 9, 1998
Salt Lake City, UT

I. SUMMARY OF ACTION SINCE OCTOBER 17, 1997 MEETING WITH DNR

- A. REVIEW OF DNR AND ASH GROVE FILE INFORMATION
- B. REVIEW OF PROPOSED MINE PLAN
- C. REVIEW OF DNR APRIL 4, 1996 COMMENTS
- D. GEOTECHNICAL INVESTIGATION

II. REVIEW OF DRAFT MAPS

- A. BASE MAP
- B. SURFACE FACILITIES - PLANT
- C. SURFACE FACILITIES - PLANT QUARRY
- D. OWNERSHIP MAP

III. REVIEW OF EXAMPLES DRAFT RESPONSES TO DNR LETTER DATED APRIL 4, 1996

IV. SCHEDULE

- A. COMPUTER MODELING
- B. DRAFT REVIEW
- C. SUBMITTAL TO DNR

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DRAFT RESPONSES TO DNR LETTER DATED APRIL 4, 1996

106.4 Nature of materials mined, waste and estimated tonnages.

106.4 Please describe typical particle size of shale material to be placed in the disposal areas and an estimate of the proportion of the sizes.

The quarry operation does not have any measured data of its run-of-mine shale rock sizes. However, visual observations of rock stockpiles indicate the material will range from boulders to fine (200 mesh) particle sizes. The shale material placed in the disposal areas will be typical run-of-mine rock sizes. The loading and haulage equipment used by the quarry operations will limit the largest particle size. Currently the largest loading unit is a Caterpillar 992 loader. The loader's bucket is approximately 15 cubic yards in size. Therefore, it is possible to experience single rock boulders whose largest dimension is 10 feet on a side. However, quarry operators expect only a small proportion ($>>1$) of this largest size.

106.9 Location & size of ore, waste, tailings, ponds.

106.9 We have noticed that the vertical height shown for the shale placement areas 1 and 2 shown as 740 feet and 230 feet, respectively, in cross sections in Appendix C of this response indicates the maximum vertical height of these shale placement areas is 640 feet. Please clarify this conflicting information.

The text is in error. The maximum height of the shale placement structures is 740 feet. However, due to revisions to eliminate the shale placement areas this comment is no longer relevant.

107.3 Erosion control & sediment control.

107.3 Proposed revision to eliminate shale placement areas 1 and 2.

Conveyors are no longer planned for use in placing the waste shale. Therefore, shale placement areas 1 and 2, as proposed in the March 1995 submittal, are to be abandoned in favor of contemporaneous reclamation. Contemporaneous reclamation will be accomplished by placing shale into previously mined sections of the pit.

Shale will be placed using trucks that gain access to the waste dump along highwall benches, from roads built on virgin ground adjacent to highwalls, and from the pit floor. The shale will not be compacted in thin lifts, but end dumped over the edge of benches that will range from 60 to 300 feet in height. Dozers will work the front faces of these dumps to meet the design grade of 2 horizontal to 1 vertical. This will provide some compaction to the dump as will vehicle traffic and the passage of time. Trucks butt dumping a layer and dozers leveling that layer will build some areas of the dump in thinner lifts.

These activities are graphically shown in the following:

Drawing XXXX Showing the completely excavation with no reclamation.

Drawing YYYY Showing the completely reclaimed shale dump.

Drawing ZZZZ Showing a typical layout for spoil bench building using pit highwall access roads.

Drawing AAAA Showing typical cross-sections through the completed shale dump.

The operator's latest response did not specifically address the issue regarding the inconsistencies of the steepness of the reclaimed slopes.

The new shale placement area will have a slope of 2:1.

107.6 Concurrent Reclamation

107.6 Describe in more detail how terracing and other slope stabilizing methods will be applied.

With the shale spoil slops laid back to 2:1, horizontal : vertical the slopes will be in a stable situation. Stability will be enhanced by the compaction provided by truck traffic and dozers working the slopes.

Small terraces are planned that will cut horizontally across the slopes to collect drainage and direct it into rock lined drop structures. The terraces will be laid out so that water will flow over the slopes no more than 400' before encountering a terrace and being directed to a drop structure.

Typical terraces and drop structures are shown in Drawing bbb.

109.1 Impacts to surface groundwater systems.

109.1 Surface Water - where will drainage flow down terraces and how will rip rap, mulches or fabric be used on the steep slopes.

As noted in 107.7 and shown in Drawing bbb the terraces will catch water and route it to drop structures. The terraces are lined will be lined with an acceptable material and then a layer of nominal 1' rip rap will be added. The terraces will be laid out on a slope of about 1% and the drop structures will come directly down the 2:1 faces. Drainage from the drop structures will be routed into the existing natural drainage channels, as is shown in the Reclamation map ddd.

109.1 The drawings show the final configuration as one continuous slope, while sections of the text in this response describe these slopes as being terraced. Please clarify.

The slopes are terraced, however, the drawings are presented at a scale which uses a contour interval of 60 feet. This contour interval coincides with the height of the individual terraces used in building the placement area. An enlargement of the drawing will be provided to show in detail the terraced slope.

109.4 Slope stability, erosion control, air quality, safety.

109.4 Ash Grove's conversion from truck haulage to conveyor haulage is anticipated to greatly reduce fugitive dust by eliminating truck loading, truck traffic and truck dumping.

This comment is no longer applicable. A revaluation of material handling by the quarry operator has concluded the economic justification of replacing trucks with a conveyor system is not valid. Therefore, haulage trucks will continued to be used to haul limestone and shale rock.

In order to minimize fugitive dust at the quarry, all unpaved roads and other unpaved operational areas shall be water sprayed and/or chemically treated to minimize fugitive dust. The sprays shall operate whenever dry conditions warrant. Freezing temperatures may limit the use of water sprays. Therefore, water sprays shall not be required during periods of freezing temperatures. installed paralleling each major haulroad

111.9 Dams impoundments left self draining & stable.

111.9 Make sure that all unreclaimed ponds are self maintaining and free draining.

After reconsidering the plans in this respect it has been decided to grade out all ponds once reclamation has been completed and seed the sites of these ponds.